From:	Leinenbach, Peter
To:	Kubo, Teresa; Henning, Alan; Powers, David
Subject:	FW: Ripstream meeting 12-3-13 revised.pptx
Date:	Tuesday, December 03, 2013 7:42:35 AM
Attachments:	[redacted]

This was in my in box this morning

From: BUTTERIS Justin [mailto:justin.butteris@state.or.us]
Sent: Monday, December 02, 2013 5:04 PM
To: Leinenbach, Peter
Subject: Ripstream meeting 12-3-13 revised.pptx

Hi Pete,

Attached are the materials I prepared for the meeting tomorrow. There may be more from Jeremy and Mark so I will try to get those to you before the meeting for note taking. We'll have everything up on the computer for the gotomeeting for you to see as we go along.

Thanks,

Justin Butteris

Agenda

Introductions

Purpose of the meeting –

- Purpose: to provide high level of understanding about the Ripstream study, and its relevancy to and consistency with ODF FMPs
- Scope:
    - Ripstream, especially as it pertains to State Forests
    - FMP rules and Elliott sales data
    - large wood

Ripstream Primer

- Methods
- Design
- Results

Discussion – Q&A

FMP practices

- HCP Tables 5-5 and 5-6
- Constraints
- Small type N special considerations (sources, assoc. wetlands, junctions, waterfalls)

Discussion – Q&A

2009-10 Sales Data

Discussion – Q&A

Large Wood

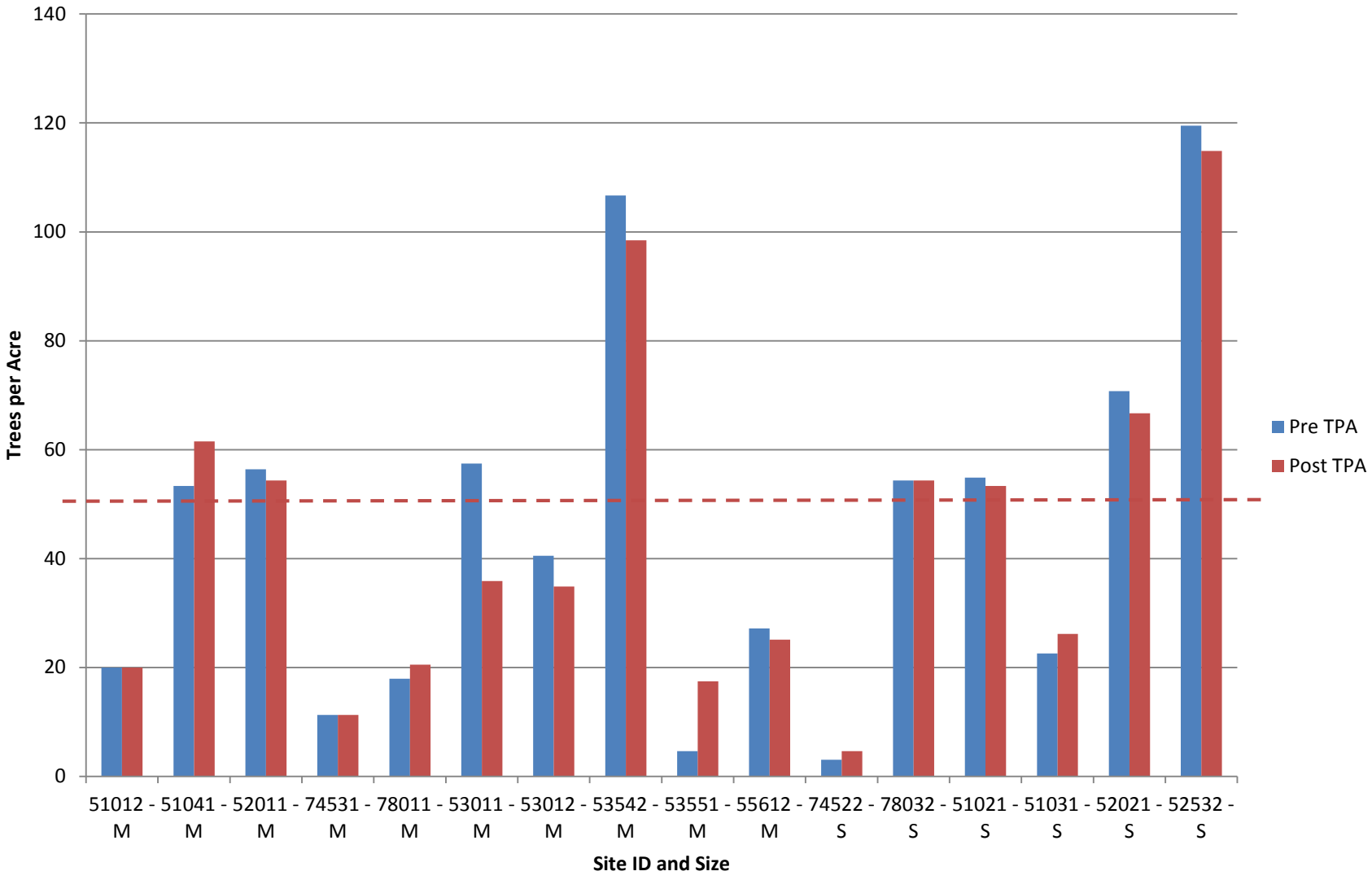
Discussion – Q&A

Visit parking lot as time allows

Set date for next meeting

Final Words

Tasks – review


140
120
100
80
60
40
20
0
Trees per Acre
Pre TPA
Post TPA
51012 - M
51041 - M
52011 - M
74531 - M
78011 - M
53011 - M
53012 - M
53542 - M
53551 - M
55612 - M
74522 - S
78032 - S
51021 - S
51031 - S
52021 - S
52532 - S
Site ID and Size

				BA/Acre (conifer) (sq ft / ac)			
Site ID & stream size	Pre # Conifers	Pre TPA (conifer)	Post TPA (conifer)	Pre Harvest	As Harvested	Relative Density	Limiting Factor
51012 - M	39	20	20	41.94	46.65	~10 RD	TPA/RD – need 50 TPA and RD >25
51041 - M	104	53.33	61.54	166.37	130.86	~30 RD	MFC –BA >220 future condition desired
52011 - M	110	56.41	54.36	172.06	178.32	~39 RD	MFC –BA >220 future condition desired
74531 - M	22	11.28	11.28	228.36	253.44	<40 RD	TPA – need 50 TPA
78011 - M	35	17.95	20.51	99.49	138.98	~26 RD	TPA – need 50 TPA
53011 - M	112	57.44	35.9	159.42	123.13	~26 RD	MFC –BA >220 future condition desired
53012 - M	79	40.51	34.87	117.58	115.1	~25 RD	TPA – need 50 TPA
53542 - M	208	106.67	98.46	296.37	290.64	~65 RD	MFC –BA >220 future condition desired
53551 - M	9	4.62	17.44	33.16	54.23	~13 RD	TPA/RD – need 50 TPA and RD >25
55612 - M	53	27.18	25.13	57.15	56.89	~13 RD	TPA/RD – need 50 TPA and RD >25
74522 - S	6	3.08	4.62	35.96	58.33	<10 RD	TPA/RD – need 50 TPA and RD >25
78032 - S	106	54.36	54.36	140.23	154.51		MFC –BA >220 future condition desired
51021 - S	107	54.87	53.33	124.28	141.06	~30 RD	MFC –BA >220 future condition desired
51031 - S	44	22.56	26.15	50.43	50.72		TPA – need 40 trees per 1000 ft of RMA
52021 - S	138	70.77	66.67	167.36	174.86		*Clearcut for hardwood (alder)*
52532 - S	233	119.49	114.87	237.82	242.15		MFC –BA >220 future condition desired

Stand Density Index Thresholds Diagram

TPA	50
SDI %	25%

SDI Limit
55%

MAX SDI
600

BAA

QMD	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400
6	102 7%	204 15%	306 22%	407 30%	509 37%	611 45%	713 52%	815 60%	917 67%	1019 75%	1120 82%	1222 90%	1324 97%	1426 105%	1528 112%	1630 120%	1732 127%	1833 135%	1935 142%	2037 150%
8	57 7%	115 13%	172 20%	229 27%	286 33%	344 40%	401 47%	458 53%	516 60%	573 67%	630 73%	688 80%	745 87%	802 93%	859 100%	917 107%	974 113%	1031 120%	1089 127%	1146 133%
10	37 6%	73 12%	110 18%	147 24%	183 31%	220 37%	257 43%	293 49%	330 55%	367 61%	403 67%	440 73%	477 79%	513 86%	550 92%	587 98%	623 104%	660 110%	697 116%	733 122%
12	25 6%	51 11%	76 17%	102 23%	127 28%	153 34%	178 40%	204 45%	229 51%	255 57%	280 63%	306 68%	331 74%	357 80%	382 85%	407 91%	433 97%	458 102%	484 108%	509 114%
14	19 5%	37 11%	56 16%	75 21%	94 27%	112 32%	131 37%	150 43%	168 48%	187 54%	206 59%	225 64%	243 70%	262 75%	281 80%	299 86%	318 91%	337 96%	355 102%	374 107%
16	14 5%	29 10%	43 15%	57 20%	72 25%	86 30%	100 36%	115 41%	129 46%	143 51%	158 56%	172 61%	186 66%	201 71%	215 76%	229 81%	244 86%	258 91%	272 96%	286 102%
18	11 5%	23 10%	34 15%	45 19%	57 24%	68 29%	79 34%	91 39%	102 44%	113 48%	124 53%	136 58%	147 63%	158 68%	170 73%	181 78%	192 82%	204 87%	215 92%	226 97%
20	9 5%	18 9%	28 14%	37 19%	46 23%	55 28%	64 33%	73 37%	83 42%	92 46%	101 51%	110 56%	119 60%	128 65%	138 70%	147 74%	156 79%	165 84%	174 88%	183 93%
22	8 4%	15 9%	23 13%	30 18%	38 22%	45 27%	53 31%	61 36%	68 40%	76 45%	83 49%	91 54%	98 58%	106 63%	114 67%	121 72%	129 76%	136 81%	144 85%	152 90%
24	6 4%	13 9%	19 13%	25 17%	32 22%	38 26%	45 30%	51 35%	57 39%	64 43%	70 48%	76 52%	83 56%	89 61%	95 65%	102 69%	108 74%	115 78%	121 82%	127 86%
26	5 4%	11 8%	16 13%	22 17%	27 21%	33 25%	38 29%	43 34%	49 38%	54 42%	60 46%	65 50%	71 54%	76 59%	81 63%	87 67%	92 71%	98 75%	103 80%	108 84%
28	5 4%	9 8%	14 12%	19 16%	23 20%	28 24%	33 28%	37 33%	42 37%	47 41%	51 45%	56 49%	61 53%	65 57%	70 61%	75 65%	80 69%	84 73%	89 77%	94 81%
30	4 4%	8 8%	12 12%	16 16%	20 20%	24 24%	29 28%	33 32%	37 36%	41 40%	45 44%	49 48%	53 51%	57 55%	61 59%	65 63%	69 67%	73 71%	77 75%	81 79%
32	4 4%	7 8%	11 12%	14 15%	18 19%	21 23%	25 27%	29 31%	32 35%	36 39%	39 42%	43 46%	47 50%	50 54%	54 58%	57 62%	61 66%	64 69%	68 73%	72 77%
34	3 4%	6 8%	10 11%	13 15%	16 19%	19 23%	22 26%	25 30%	29 34%	32 38%	35 41%	38 45%	41 49%	44 53%	48 57%	51 60%	54 64%	57 68%	60 72%	63 75%
36	3 4%	6 7%	8 11%	11 15%	14 18%	17 22%	20 26%	23 29%	25 33%	28 37%	31 41%	34 44%	37 48%	40 52%	42 55%	45 59%	48 63%	51 66%	54 70%	57 74%
38	3 4%	5 7%	8 11%	10 14%	13 18%	15 22%	18 25%	20 29%	23 32%	25 36%	28 40%	30 43%	33 47%	36 50%	38 54%	41 58%	43 61%	46 65%	48 69%	51 72%
40	2 4%	5 7%	7 11%	9 14%	11 18%	14 21%	16 25%	18 28%	21 32%	23 35%	25 39%	28 42%	30 46%	32 49%	34 53%	37 57%	39 60%	41 64%	44 67%	46 71%

Table 5-5: Management Standards for Type F Stream Riparian Management Areas

All Stream Sizes: Large, Medium, and Small	
Stream bank zone 0 to 25 feet	• No harvest • Less than 10 percent vegetative disturbance • Full suspension required during cable yarding • No ground-based equipment operation • Leave any trees damaged or felled from yarding activities
Inner RMA zone 25 to 100 feet	• Manage for mature forest condition[1] • No management activity where mature forest condition exists, or where conditions are suitable for development of mature forest condition in a reasonable time frame without further treatment • Actively manage where necessary to achieve the desired condition in a timely manner • Minimum 15-year interval between harvest entries, and minimum number of entries necessary to achieve the desired condition • Partial cutting will maintain a conifer density of at least 25 relative density, and will retain at least 50 trees per acre • No more than 10 percent vegetative disturbance allowed from cable yarding • Full suspension wherever possible, or one-end suspension on all cable-yarded material • Ground-based equipment operation limited to area more than 50 feet from aquatic zone and slopes less than 35 percent, and allowed on no more than 10 percent of area • Leave any trees damaged or felled from yarding activities and additional felled, girdled, or topped trees to contribute toward downed wood targets[2] • Retain all dead and downed material that was present prior to the operation
Outer RMA zone 100 to 160 feet	• Retain at least 10 to 45[3] conifer trees and snags per acre (15 to 70 trees per 1,000 feet of RMA)[4] • Retain all snags as safety permits • Less than 10 percent ground disturbance from yarding activities • Retain all dead and downed material that was present prior to the operation

[1] Desired mature forest condition consists of a stand dominated by large conifer trees, or where hardwood-dominated conditions are expected to be the natural plant community (a mature hardwood/shrub community). For conifer stands, this equates to a basal area of 220 square feet or more per acre, inclusive of all conifers over 11 inches DBH. At a mature age (80 to 100 years or greater), this equals 40 to 45 conifer trees 32 inches in DBH per acre.

[2] Up to ten trees per acre will be retained as felled, girdled, or topped trees during partial cutting, to reach a target of 600 to 900 cubic feet per acre of hard downed wood.

[3] Outer zone tree retention target will be increased when less than the target number of conifers is present in the inner zone. The process for calculating the outer zone retention target is described in the section following the RMA prescription tables.

[4] All trees retained will be dominant or co-dominant conifer trees (if available). To balance the need for short-term and long-term recruitment of large wood to the aquatic zone, preference will be given to retaining trees on adjacent slopes, trees leaning toward the aquatic zone, and trees closest to the channel.

Table 5-6: Management Standards for Type N Stream RMAs

Large and Medium Type N Streams	
Stream bank zone 0 to 25 feet	• No harvest • Less than 10 percent vegetative disturbance • Full suspension required • No ground-based equipment operation • Leave any trees damaged or felled from yarding activities
Inner RMA zone 25 to 100 feet	• Manage for mature forest condition[1] • No management activity where mature forest condition target already exists • Actively manage where beneficial to achieve mature forest condition • Minimum 15-year interval between harvest entries, and minimum number of entries necessary to achieve the desired condition • Partial cutting will maintain a conifer density of at least 25 relative density, and will retain at least 50 trees per acre • No more than 10 percent vegetative disturbance allowed from cable yarding • Full suspension wherever possible, or one-end suspension on all cable-yarded material • Ground-based equipment operation limited to area more than 50 feet from aquatic zone and slopes less than 35 percent, and allowed on no more than 10 percent of area • Leave any trees damaged or felled from yarding activities and additional felled, girdled, or topped trees to contribute to downed wood targets[2] • Retain all dead and downed material that was present prior to the operation
Outer RMA zone 100 to 160 feet	• Manage to retain at least 10 conifer trees and snags per acre (15 trees per 1,000 feet of RMA)[3] • Retain all snags as safety permits

[1] Desired mature forest condition consists of a stand dominated by large conifer trees, or where hardwood-dominated conditions are expected to be the natural plant community (a mature hardwood/shrub community). For conifer stands, this equates to a basal area of 220 square feet or more per acre, inclusive of all conifers over 11 inches DBH. At a mature age (80 to 100 years or greater), this equals 40 to 45 conifer trees 32 inches in DBH per acre.

[2] Up to ten trees per acre will be retained as felled, girdled, or topped trees during partial cutting, to reach a target of 600 to 900 cubic feet per acre of hard downed wood.

[3] All trees retained will be dominant or co-dominant conifer trees (if available). To balance the need for short-term and long-term recruitment of large wood to the aquatic zone, preference will be given to retaining trees on adjacent slopes, trees leaning toward the aquatic zone, and trees closest to the channel.

Table 5-6 continued

Small Perennial Type N Streams (applied to at least 75 percent of reach)[1]	
Stream bank zone 0 to 25 feet	• No harvest • No ground-based equipment operation
Inner RMA zone 25 to 100 feet	• Manage to retain at least 15 to 25 conifer trees and snags per acre (25 to 40 trees per 1,000 feet of RMA)[2,3] • Retain all other snags as safety permits • Within 500 feet of a confluence with a Type F stream, retain all hardwoods, non-merchantable trees, and other conifers as necessary, to achieve 80 percent shade over aquatic zone • Retain all dead and downed material that was present prior to the operation
Outer RMA zone 100 to 160 feet	• Manage to retain 0 to 10 conifer trees and snags per acre (0 to 15 trees per 1,000 feet of RMA)[2,3] • Retain all snags as safety permits
Small Seasonal Type N Streams: High Energy Reaches (applied to at least 75 percent of reach)[1]	
Stream bank zone 0 to 25 feet	• No harvest • No ground-based equipment operation
Inner RMA zone 25 to 100 feet	• Manage to retain at least 15 to 25 conifer trees and snags per acre (25 to 40 trees per 1,000 feet of RMA)[2,3] • Retain all other snags as safety permits • Retain all dead and downed material that was present prior to the operation
Outer RMA zone 100 to 160 feet	• Manage to retain 0 to 10 conifer trees and snags per acre (0 to 15 trees per 1,000 feet of RMA)[2,3] • Retain all snags as safety permits

[1] Prescription to be applied to at least 75 percent of perennial stream reach, including the first 500 feet above the confluence with a Type F, and areas that meet the definition of a Special Emphasis Area according to the definitions in the section following these tables.

[2] All trees retained will be dominant or co-dominant conifer trees (if available). To balance the need for short-term and long-term recruitment of large wood to the aquatic zone, preference will be given to retaining trees on adjacent slopes, trees leaning toward the aquatic zone, and trees closest to the channel.

[3] In meeting the tree retention target for the inner and outer zones, preference will be given to retaining trees within the inner zone. Where there are sufficient trees within the inner zone to meet the combined target for the two zones (40 trees per 1,000 feet), no additional leave trees are required in the outer zone.

Table 5-6 Continued

Small Seasonal Type N Streams: Potential Debris Flow Track Reaches (applied to at least 75 percent of reach)[1]	
Stream bank zone 0 to 25 feet	• No harvest • No ground-based equipment operation
Inner RMA zone 25 to100 feet	• Manage to retain at least 10 conifer trees and snags per acre (15 trees per 1,000 feet. of RMA)[2,4] • Retain all other snags as safety permits • Retain all dead and downed material that was present prior to the operation
Outer RMA zone 100 to160 feet	• Retain trees and snags sufficient to meet legacy structure targets
Other Small Seasonal Type N Streams (applied to at least 75 percent of reach)	
Stream bank zone 0 to25 feet	• Maintain integrity of stream channel • No ground-based equipment operation
Inner RMA zone 25 to100 feet	• Manage to retain at least 10 conifer trees and snags per acre where operationally feasible (15 trees per 1,000 feet of RMA)[2] • Retain all other snags as safety permits • Retain all dead and downed material that was present prior to the operation
Outer RMA zone 100 to160 feet	• Retain trees and snags sufficient to meet legacy structure targets

[1] Prescription to be applied to at least 75 percent of stream reach, including the first 500 feet above the confluence with a Type F stream.

[2] All trees retained will be dominant or co-dominant conifer trees (if available). To balance the need for short-term and long-term recruitment of large wood to the aquatic zone, preference will be given to retaining trees on adjacent slopes, trees leaning toward the aquatic zone, and trees closest to the channel.

[3] In meeting the tree retention target for the inner and outer zones, preference will be given to retaining trees within the inner zone. Where there are sufficient trees within the inner zone to meet the combined target for the two zones (40 trees per 1,000 feet), no additional leave trees are required in the outer zone.

[4] To maximize the influence of retained trees on debris flow processes, preference will be given to retaining these trees as close to the stream channel as operationally feasible, or on adjacent slope features that exhibit a high potential for failure and delivery to the stream.

2009 Sale Plan – Type F, all sizes								
Length (ft)	1-side or 2-side	conifer trees	acres	Conifer TPA	Conifer Basal Area (ft^2)	conifer Basal area per acre (sq ft/ ac)	Conifer avg DBH (in)	SDI
2,900	1	257	10.7	24	979	91.9	24.8	
2470	1	157	9.1	17	639.02	70.4	26	
2595	1	309	6.9	45	890.72	130.0	22	
549	1	63	2.0	31	248	123.0	26	
1700	1	53	6.2	8	448	71.7	35	
1750	2	350	6.4	54.5	466.5	72.6	15	19
1750	2	225	6.4	35	461.07	71.7	18	
3050	1	193	11.2	17	673.71	60.1	24	
50	2	7	0.1	101	48.9	710.0	34	
1300	1	82	4.8	17	414.6	86.8	29	

2010 Sale Plan – type F, all sizes							
Length (ft)	1-side or 2-side	conifer trees	acres	Conifer TPA	Conifer Basal Area (ft^2)	conifer Basal area per acre (sq ft / ac)	conifer avg DBH (in)
1589	1	237	4.742195	50	839	176.9	24
460	1	53	1.478421	36	207	140.2	25
670	1	77	2.460973	31	130	52.8	17
1630	2	243	5.612948	43	968	172.4	26
1830	2	159	5.881543	27	984	167.30	31
1600	1	129	5.509642	23	441	80.1	21
925	1	101	3.185262	32			